

Amendments to the Specifications:

Please replace paragraph [0009] with the following amended paragraph:

[0009] The primary benefit of a dry type patch for teeth whitening, which was filed by the present inventors, is that when a user peels off the patch from a release liner using the hands and attaches the patch to the teeth, adhesive ingredients contained in an adhesive layer are not deposited on the hands and unwanted sites, e.g., the face and lips, due to user's error. In addition, since the patch is a dry type, it solves safety problems caused by a high concentration hydroxide used as a teeth whitening agent. That is, after the dry type patch is attached to the teeth, a ~~glassyy~~ glassy polymer provides strong adhesion to the teeth while being hydrated by moisture on the tooth surface and a whitening agent begins to be released. Accordingly, the dry type patch is a safe formulation having no problem in use.

Please replace paragraph [0013] with the following amended paragraph:

[0013] In accordance with one aspect of the present invention, there is provided dry type patches in which a hydrophilic ~~glassyy~~ glassy polymer is used for various layers including an active ingredient-containing layer. Since the dry type patches of the present invention can provide sufficient contact of teeth whitening agent with stains formed on tooth surface, excellent whitening effects can be obtained in a short period of time.

Please replace paragraph [0040] with the following amended paragraph:

[0040] In order to manufacture the dry type patches for teeth whitening of the present

invention, a hydrophilic ~~glassyy~~ glassy polymer is used to form layers including an adhesive layer, active material-containing layer and the other layers just except a backing layer. The hydrophilic ~~glassyy~~ glassy polymer provides strong adhesion to teeth and releases a teeth whitening agent while being hydrated at the enamel layer of teeth in moist oral cavity.

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Please replace paragraph [0045] with the following amended paragraph:

[0045] On the other hand, there may be a problem that peroxide used as a teeth whitening agent in dry type patches for teeth whitening becomes unstable as time goes by. In order to
10 solve the instability of peroxide in the present invention, a peroxide stabilizer may be used, or a solution of a ~~glassyy~~ glassy polymer having a good compatibility with peroxide is added by adjusting the solvent ratio without using peroxide stabilizer. Thus, the present invention provides a new type patch in which a hydrophilic ~~glassyy~~ glassy polymer is used as a base polymer for an adhesive layer of a dry type patch using a peroxide as a teeth whitening agent,
15 and a peroxide stabilizer or a solution of a ~~glassyy~~ glassy polymer having a good compatibility with the peroxide is added by adjusting the solvent ratio, instead of the peroxide stabilizer. The new type patch of the present invention can ensure the stability of peroxide.

Please replace paragraph [0048] with the following amended paragraph:

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[0048] The patches for teeth whitening of the present invention are matrix type patches, and are intended to be attached not to skin or mucous membrane but to the enamel layer of teeth so as to supply a teeth whitening agent to the surface of teeth for a sufficient time to whiten the teeth. The principle that the patches are attached to teeth and the teeth whitening agent

contained in the matrix is released onto the surface of teeth is described below: In the field of transdermal drug delivery systems with time lag, there has been suggested a transdermal formulation using moisture transpired from skin to release a drug when a predetermined time passes after its attachment. More particularly, a barrier impermeable to the drug is provided
5 between a drug reservoir and a skin adhesion surface in the transdermal formulation. When the formulation is attached to skin, the barrier is gradually hydrated by moisture transpired from skin, whereby its permeability to the drug is increased. In this case, a hydrophilic ~~glassyy~~ glassy polymer is used as the barrier material. In the present invention, a hydrophilic ~~glassyy~~ glassy polymer is used as a material for various layers of the matrix type patch. By this patch
10 structure, the release of a whitening agent is prevented when storing and attaching the patch to teeth using hands. After the patch is attached, the patch begins to be hydrated by moisture on the tooth surface and thus adhesive strength is obtained so that the whitening agent is released. A hydrophilic ~~glassyy~~ glassy polymer is used as a material for various layers of the matrix type patch. Therefore, in accordance with another aspect of the present invention, a hydrophilic
15 ~~glassyy~~ glassy polymer is used as a material for layers of the matrix type patch other than the backing layer.

Please replace paragraph [0049] with the following amended paragraph:

20 [0049] For these purposes, examples of the ~~glassyy~~ glassy polymer which can be used in the adhesive layer of the patch according to the present invention include polyalkylvinyl ether-maleic acid copolymer (PVM/MA copolymer) such as Gantrez AN 119, AN 139 and S-97, polyvinyl alcohol, polyacrylic acid, Poloxamer 407 (Pluronic), polyvinyl pyrrolidone-vinyl acetate copolymer (PVP/VA copolymer) such as Luviskol VA and Plasdone S PVP/VA,

polyvinyl pyrrolidone (PVP, K-15~K-120), Polyquaternium-11 (Gafquat 755N), Polyquaternium-39 (Merquat plus 3330), Carbomer (Carbopol), hydroxypropylmethyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, gelatin and alginate salt such as sodium alginate. The above-described polymers can be used alone or in mixtures thereof. Solvents
5 for these polymers include water, ethanol or mixtures thereof with varied mixing ratios.

Please replace paragraph [0050] with the following amended paragraph:

[0050] The patch to be attached onto teeth should be flexible enough to be deformable so that
10 it conforms to contours of teeth. Since some polymers have poor flexibility, suitable plasticizers may be added. The plasticizer is dependent on the kind and preparation of the ~~glassyy~~ glassy polymer, but polypropylene glycol, glycerin or polyethylene glycol is generally used as the plasticizer.

15 Please replace paragraph [0056] with the following amended paragraph:

[0056] The stabilizer contained in the patch according to the present invention is mostly a surfactant or emulsifier, which is considered to form micelles and produce preferable effects on the peroxide stabilization of the product. For example, the stabilizer prevents the contact
20 between the peroxide and material having low compatibility with the peroxide, uniformly disperses a whitening agent in the patch when a ~~glassyy~~ glassy polymer having poor spreadability is used, and allows to uniformly apply an adhesive layer. In practice, it was found that when gel is applied thinly over a large surface area, the residual amount of peroxide decreases with time, while a gel of the same composition, contained in a container, is stable at a

relatively high temperature. The present inventors found that since some hydrophilic ~~glassyy~~
glassy polymers have a good compatibility with peroxide, a solution of the hydrophilic ~~glassyy~~
glassy polymer with adjusted solvent ratio can sufficiently the peroxide without the use of a
peroxide stabilizer. Accordingly, the present invention is not limited to a combination of
5 peroxide and a peroxide stabilizer. Now, more detailed description is described below.

Please replace paragraph [0057] with the following amended paragraph:

[0057] Hydrophilic ~~glassyy~~ glassy polymers such as polyvinyl pyrrolidone (PVP, K-15~K-
10 120), polyquaternium-11, polyquaternium-39, polyvinyl pyrrolidone-vinyl acetate copolymer
(PVP/VA copolymer) are highly compatible with peroxides and are easily soluble in water,
ethanol or a mixture thereof. Accordingly, peroxide in the patch can be stabilized by using a
mixture of water and ethanol in a mixing ratio of 9:1 to 0:10, without using a peroxide stabilizer.
It is believed that the good compatibility of polyvinyl pyrrolidone with a peroxide results from
15 the stabilization of peroxide by formation of a complex with polyvinyl pyrrolidone via hydrogen
bonding. Polyvinyl pyrrolidone (PVP) is the most preferred hydrophilic ~~glassyy~~ glassy
polymer to be used in the active ingredient-containing layer containing peroxide. Among the
available PVP, K-15~K-120 are used, and K-90 (PVP) is preferably used in the patch of the
present invention. K-30 (PVP) is more preferable since higher gel content is desired in the
20 efficiency upon producing by a casting method. Preferably, the PVP has a relatively high
molecular weight, preferably greater than about 500,000, more preferably greater than about
1,000,000. In a preferred embodiment, PVP having a molecular weight of 1,270,000 is used.
Further, peroxides are found to be highly compatible with polymers having quaternary
ammonium structure, such as polyquaternium. According to the present invention, a mixture of

water and ethanol is used as solvent for adhesive materials. ~~Glassyy~~ glassy polymers which are highly compatible with peroxide are typically so hydrophilic that they cannot be uniformly coated on the surface of a release liner or other sheet. The mixture of water and ethanol can solve such problem so as to form a uniform sheet layer. Therefore, in accordance with another aspect of the present invention, there is provided a patch for tooth whitening comprising a peroxide as a tooth whitening agent and a glassy polymer having a good compatibility with the peroxide, wherein the patch is stabilized at a high temperature by adjusting the ratio of water and ethanol without addition of a peroxide stabilizer. Also, the patches of the present invention further comprise a plasticizer to provide a sufficient flexibility for the patch. Suitable plasticizer includes propylene glycol, glycerin, and polyethylene glycol although it will vary depending on the kind and preparation of the polymer used.

Please replace paragraph [0063] with the following amended paragraph:

[0063] The method for using the patch for teeth whitening according to the present invention comprises attaching the patch to the tooth surface to be whitened. The patch consists of a water-soluble section and a water-insoluble section (backing layer). The water-soluble section is directly contacted with the surface of the teeth, and the backing layer acts as a protective wall. As the dry type patch for teeth whitening is hydrated, its flexibility and adhesive strength increase. If the tooth surface is too dry, the patch is initially not attached to the tooth surface. Since the patch can be sufficiently hydrated even in the presence of a small amount of moisture, there is no special problem so long as the tooth surface is not completely dried. In addition, since an excess of moisture can rapidly dissolve the hydrophilic ~~glassyy~~ glassy polymer, the adhesive strength of the patch is greatly reduced. Accordingly, it is undesirable to drink a large

amount of water or beverage during wearing the patch for teeth whitening.

Please replace paragraph [0091] with the following amended paragraph:

5 [0091] As apparent from the above description, the patch for teeth whitening according to the present invention is a dry type patch in which a hydrophilic ~~glassyy~~ glassy polymer is used as a material for layers other than a backing layer. After the dry type patch is attached to the teeth, the ~~glassyy~~ glassy polymer provides strong adhesion to the teeth while being hydrated by moisture on the tooth surface and a whitening agent begins to be released. Accordingly, the dry
10 type patch is a safe formulation having no problem in use. In addition, although the dry type patch comes into contact with the hands or other sites, it does not leave any residue, which provides convenience in use. Further, since the dry type patch has a high adhesion to the teeth, it is not detached from the teeth during being worn and thus exhibits excellent whitening effects. Furthermore, since contact surface 100 of dry type patch covers all the portions of the teeth while
15 minimizing contact with gums, no or little irritation is caused and wearability is excellent.